

# WHAT IS CLAIMED IS:

1. A recording medium for recording and reproducing information utilizing mutual interaction due to near field light generated by light incident to an optical head or light irradiated onto a recording medium, the recording medium comprising:

a layer dispersed with metal particulate taken as a data mark.

2. The recording medium according to claim 1, wherein the metal particulate generates a surface plasmon due to the incident light or the irradiating light.

3. The recording medium according to claim 2, wherein the metal particulate includes at least one metal of Ag, Au, Cr, Al or Cu.

4. The recording medium according to claim 2, wherein a particle diameter of the metal particulate is from 1 nanometer to 50 nanometers, and a wavelength of the incident light or irradiating light is between 300 nanometers and  $1\mu\text{m}$ .

5. A method of manufacturing a recording medium for recording and reproducing information utilizing mutual interaction due to near field light generated by light incident to an optical head or light irradiated onto a recording medium, comprising the steps of:

patterning a light-blocking layer on a transparent substrate; and

forming a layer dispersed with a metal particulate at the transparent substrate.

6. The recording medium manufacturing method according to claim 5, further including a step for removing the layer formed on the light-blocking layer.

7. A near field optical head for recording and reproducing information utilizing mutual interaction due to near field light generated by light incident to the near field optical head, the near field optical head comprising:

a conical light-passing section formed at the substrate;

an optical opening smaller than the wavelength of incident light formed at an end of the light-passing section; and

a layer dispersed with metal particulate provided at the optical opening.

8. An optical recording device for recording and reproducing information utilizing

mutual interaction of near field light generated by light irradiating a recording medium and a near field optical head, wherein

the near field optical head comprises:

a conical light-passing section formed at the substrate;

an optical opening smaller than the wavelength of the irradiating light formed at a tip of the light-passing section, and

a layer dispersed with metal particulate provided at the optical opening.

9. A near field optical head for recording and reproducing information utilizing mutual interaction due to near field light generated by light incident to the near field optical head, wherein:

an optical opening smaller than a wavelength of the incident light is formed at a tip of a pointed light-propagating body and a metal particulate is dispersed at the optical opening.

10. An optical recording device for recording and reproducing information utilizing mutual interaction of near field light generated by light irradiating a recording medium and a near field optical head, wherein

the near field optical head is equipped with a light-propagating body formed at an optical opening smaller than a wavelength of the irradiating light at a tip thereof, and

a metal particulate is dispersed at the optical opening.

11. The near field optical head according to claim 7, wherein the metal particulate comprises a material capable of generating a surface plasmon resulting from the incident light or the irradiating light.

12. The near field optical head according to claim 11, wherein the metal particulate includes at least one metal of Ag, Au, Cr, Al or Cu.

13. The near field optical head according to claim 11, wherein a particle diameter of the metal particulate is from 1 nanometer to 50 nanometers, and a wavelength of the incident light or irradiating light is between 300 nanometers and  $1\mu\text{m}$ .

14. The optical recording device according to claim 8, wherein the metal particulate comprises a material capable of generating a surface plasmon as a result of being

subjected to the incident light or the irradiating light.

15. The optical recording device according to claim 14, wherein the metal particulate includes at least one metal of Ag, Au, Cr, Al or Cu.

16. The optical recording device according to claim 14, wherein a particle diameter of the metal particulate is from 1 nanometer to 50 nanometers, and a wavelength of the incident light or irradiating light is between 300 nanometers and  $1\mu\text{m}$ .

17. The near field optical head according to claim 9, wherein the metal particulate comprises a material capable of generating a surface plasmon resulting from the incident light or the irradiating light.

18. The optical recording device according to claim 10, wherein the metal particulate comprises a material capable of generating a surface plasmon as a result of being subjected to the incident light or the irradiating light.

19. A method for manufacturing a near field optical head, comprising the steps of: forming a conical hole in a silicon substrate; forming a light blocking film at a side surface of the hole; and forming a film dispersed with metal particulate in the vicinity of the opening.

20. A method for manufacturing a near field optical head, comprising the steps of: forming a tip part at a light propagating body; forming a light blocking film at the light propagating body with the exception of the tip part; and dispersing metal particulate at the tip part.